High Pressure Check Valves

10C, 10CO Series, 10,000 psi (690 bar)
15C, 15CO Series, 15,000 psi (1034 bar)
20C, 20CO Series, 20,000 psi (1379 bar)
60C, 60CO Series, 60,000 psi (4137 bar)

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FITOK
Valves and Fittings

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10C Series

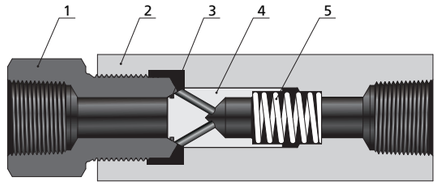
10,000 psi (690 bar)

Pipe O-Ring Check Valves

Features

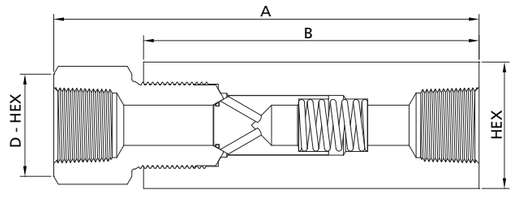
- Provides unidirectional flow and tight shut-off for liquids and gas with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve).
- Resilient O-ring seat design for noise-free closing leakage-free.
- Maximum working pressure: 10,000 psig (690 bar).
- Working temperature: -50°F (-45°C) to 400°F (204°C).
- Cracking pressure: 14 psig ~ 26 psig (0.966 bar ~ 1.794 bar).

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	O-Ring	Wide Selection of O-Rings available
4	Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Copper/molybdenum disulfide

Technical Data and Dimensions



Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)				
10CSS-FNS12	FNS12	0.52 (13.21)	4.70	6.29 (159.77)	4.75 (120.65)	1.5 (38.1)	1.75 (44.45)	10,000 (690)
10CSS-FNS16	FNS16	0.69 (17.53)	7.40	7.33 (186.18)	5.75 (146.05)	1.75 (44.45)	1.88 (47.75)	10,000 (690)

10CO Series

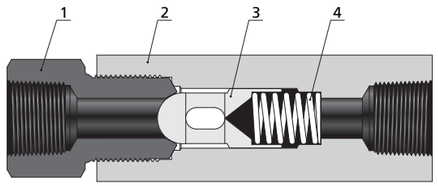
10,000 psi (690 bar)

Pipe Ball Check Valves

Features

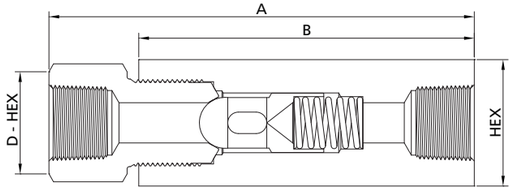
- Prevents reverse flow where leak-tight shut-off is not mandatory. When differential drops below cracking pressure, valve closes (Not for use as relief valve).
- Maximum working pressure: 10,000 psig (690 bar).
- Working temperature: -110°F (-79°C) to 400°F (204°C).
- Ball and poppet are an integral design to assure positive, in-line seating without "chatter". poppet is designed essentially for axial flow with minimum pressure drop.

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Ball Poppet	316 SS/A479
4	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)				
10COSS-FNS12	FNS12	0.52 (13.21)	4.70	6.29 (159.77)	4.75 (120.65)	1.5 (38.1)	1.75 (44.45)	10,000 (690)
10COSS-FNS16	FNS16	0.69 (17.53)	7.40	7.33 (186.18)	5.75 (146.05)	1.75 (44.45)	1.88 (47.75)	10,000 (690)

15C Series

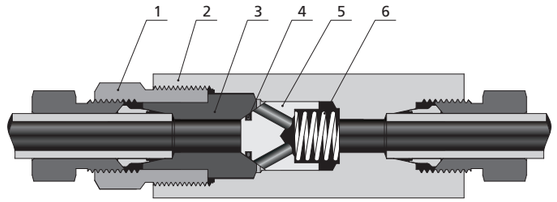
15,000 psi (1034 bar)

O-Ring Check Valves

Features

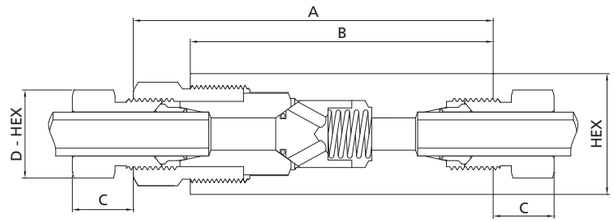
- Provides unidirectional flow and tight shut-off for liquids and gas with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve).
- Tubing sizes available for 1/4", 3/8", 1/2".
- Resilient O-ring seat design for noise-free closing leakage-free.
- Maximum working pressure: 15,000 psig (1034 bar).
- Working temperature: -50°F (-45°C) to 500°F (260°C).
- Cracking pressure: 14 psig ~ 26 psig (0.966 bar ~ 1.794 bar).

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	Wide Selection of O-Rings available
4	O-Ring	Fluorocarbon FKM
5	Poppet	316 SS/A479
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



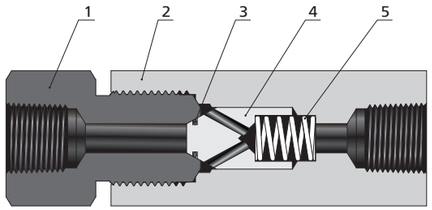
Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	C	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)					
15CSS-FH4	FH4	0.188 (4.78)	0.63	3.18 (80.77)	2.56 (65.02)	0.44 (11.18)	0.63 (16.00)	0.81 (20.57)	15,000 (1034)
15CSS-FH6	FH6	0.250 (6.35)	1.70	3.56 (90.42)	3.00 (76.20)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)	15,000 (1034)
15CSS-FH8	FH8	0.375 (9.53)	3.40	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.93 (23.62)	1.38 (35.05)	15,000 (1034)

Pipe O-Ring Check Valves

Features

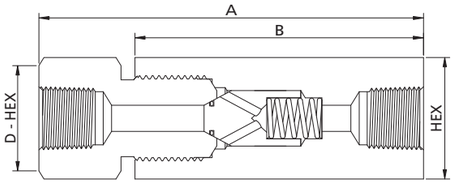
- Provides unidirectional flow and tight shut-off for liquids and gas with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve).
- Resilient O-ring seat design for noise-free closing leakage-free.
- Maximum working pressure: 15,000 psig (1034 bar).
- Working temperature: -50°F (-45°C) to 400°F (204°C).
- Cracking pressure: 14 psig ~ 26 psig (0.966 bar~1.794 bar).

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	O-Ring	Wide Selection of O-Rings available
4	Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)				
15CSS-FNS4	FNS4	0.12 (3.05)	0.28	3.37 (85.60)	2.38 (60.33)	0.94 (23.81)	0.94 (23.81)	15,000 (1034)
15CSS-FNS6	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	2.88 (73.15)	1.13 (28.58)	1.13 (28.58)	15,000 (1034)
15CSS-FNS8	FNS8	0.36 (9.12)	2.30	5.36 (136.14)	3.88 (98.55)	1.38 (34.93)	1.38 (34.93)	15,000 (1034)

15CO Series

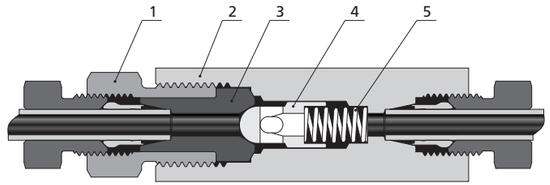
15,000 psi (1034 bar)

Ball Check Valves

Features

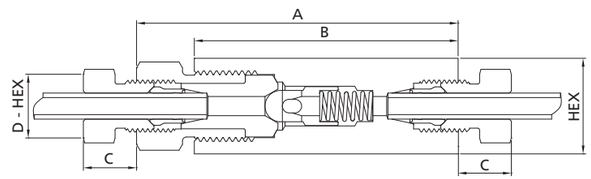
- Prevents reverse flow where leak-tight shut-off is not mandatory. When differential drops below cracking pressure, valve closes (Not for use as relief valve).
- Tubing sizes available for 1/4", 3/8", 1/2".
- Maximum working pressure: 15,000 psig (1034 bar).
- Working temperature: -110°F (-79°C) to 800°F (427°C).
- Ball and poppet are an integral design to assure positive, in-line seating without "chatter". poppet is designed essentially for axial flow with minimum pressure drop.

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	Ball Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



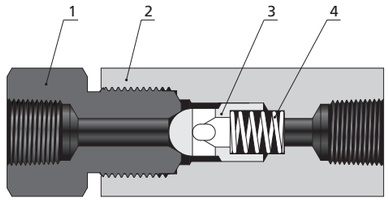
Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	C	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)					
15COSS-FH4	FH4	0.188 (4.78)	0.63	3.18 (80.77)	2.56 (65.02)	0.44 (11.18)	0.63 (16.00)	0.81 (20.57)	15,000 (1034)
15COSS-FH6	FH6	0.250 (6.35)	1.70	3.56 (90.42)	3.00 (76.20)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)	15,000 (1034)
15COSS-FH8	FH8	0.375 (9.53)	3.40	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.93 (23.62)	1.38 (35.05)	15,000 (1034)

Pipe Ball Check Valves

Features

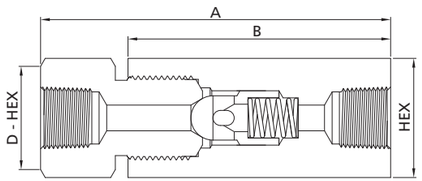
- Prevents reverse flow where leak-tight shut-off is not mandatory. When differential drops below cracking pressure, valve closes (Not for use as relief valve).
- Maximum working pressure: 15,000 psig (1034 bar).
- Working temperature: -110°F (-79°C) to 400°F (204°C).
- Ball and poppet are an integral design to assure positive, in-line seating without "chatter". poppet is designed essentially for axial flow with minimum pressure drop.

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Ball Poppet	316 SS/A479
4	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)				
15COSS-FNS4	FNS4	0.12 (3.05)	0.28	3.37 (85.60)	2.38 (60.33)	0.94 (23.81)	0.94 (23.81)	15,000 (1034)
15COSS-FNS6	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	2.88 (73.15)	1.13 (28.58)	1.13 (28.58)	15,000 (1034)
15COSS-FNS8	FNS8	0.36 (9.12)	2.30	5.36 (136.14)	3.88 (98.55)	1.38 (34.93)	1.38 (34.93)	15,000 (1034)

20C Series

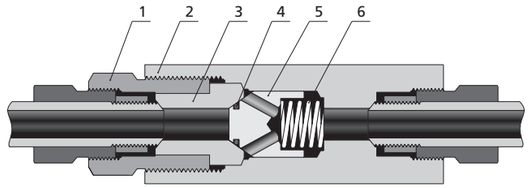
20,000 psi (1379 bar)

O-Ring Check Valves

Features

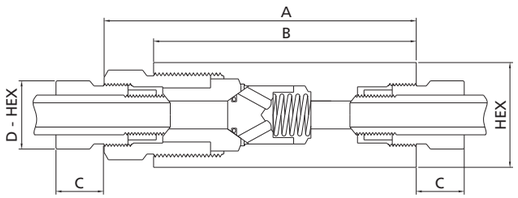
- Provides unidirectional flow and tight shut-off for liquids and gas with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve).
- Tubing sizes available for 1/4" to 1".
- Resilient O-ring seat design for noise-free closing leakage-free.
- Maximum working pressure: 20,000 psig (1379 bar).
- Working temperature: -50°F (-45°C) to 500°F (260°C).
- Cracking pressure: 14 psig ~ 26 psig (0.966 bar~1.794 bar).

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	O-Ring	Wide Selection of O-Rings available
5	Poppet	316 SS/A479
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	C	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)					
20CSS-FH4	2FH4	0.125 (3.18)	0.28	2.94 (74.68)	2.50 (63.50)	0.38 (9.65)	0.50 (12.70)	0.81 (20.57)	20,000 (1379)
20CSS-FH6	2FH6	0.218 (5.54)	0.84	3.12 (79.25)	2.62 (66.55)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)	20,000 (1379)
20CSS-FH9	2FH9	0.359 (9.12)	2.30	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.94 (23.88)	1.38 (35.05)	20,000 (1379)
20CSS-FH12	2FH12	0.516 (13.11)	4.70	5.50 (139.70)	4.75 (120.65)	0.62 (15.75)	1.19 (30.23)	1.75 (44.45)	20,000 (1379)
20CSS-FH16	2FH16	0.688 (17.48)	7.40	6.63 (168.40)	5.75 (146.05)	0.72 (18.29)	1.38 (35.05)	2.12 (53.85)	20,000 (1379)

20CO Series

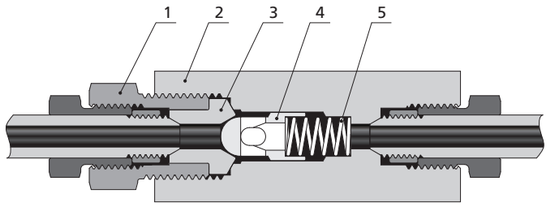
20,000 psi (1379 bar)

Ball Check Valves

Features

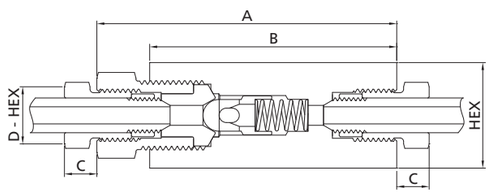
- Prevents reverse flow where leak-tight shut-off is not mandatory. When differential drops below cracking pressure, valve closes (Not for use as relief valve).
- Tubing sizes available for 1/4" to 1".
- Maximum working pressure: 20,000 psig (1379 bar).
- Working temperature: -110°F (-79°C) to 1200°F (649°C).
- Ball and poppet are an integral design to assure positive, in-line seating without "chatter". poppet is designed essentially for axial flow with minimum pressure drop.

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	Ball Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	C	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)					
20COSS-FH4	2FH4	0.125 (3.18)	0.28	2.94 (74.68)	2.50 (63.50)	0.38 (9.65)	0.50 (12.70)	0.81 (20.57)	20,000 (1379)
20COSS-FH6	2FH6	0.218 (5.54)	0.84	3.12 (79.25)	2.62 (66.55)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)	20,000 (1379)
20COSS-FH9	2FH9	0.359 (9.12)	2.30	4.18 (106.17)	3.50 (88.90)	0.53 (13.46)	0.94 (23.88)	1.38 (35.05)	20,000 (1379)
20COSS-FH12	2FH12	0.516 (13.11)	4.70	5.50 (139.70)	4.75 (120.65)	0.62 (15.75)	1.19 (30.23)	1.75 (44.45)	20,000 (1379)
20COSS-FH16	2FH16	0.688 (17.48)	7.40	6.63 (168.40)	5.75 (146.05)	0.72 (18.29)	1.38 (35.05)	2.12 (53.85)	20,000 (1379)

60C Series

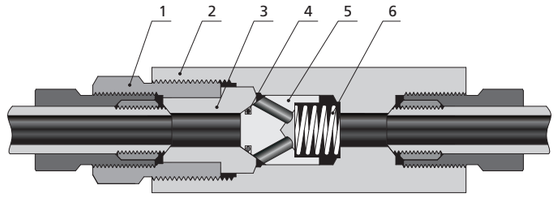
60,000 psi (4137 bar)

O-Ring Check Valves

Features

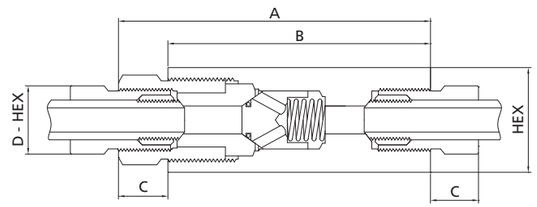
- Provides unidirectional flow and tight shut-off for liquids and gas with high reliability. When differential drops below cracking pressure, valve shuts off (Not for use as relief valve).
- Tubing sizes available for 1/4" to 9/16".
- Resilient O-ring seat design for noise-free closing leakage-free.
- Maximum working pressure: 60,000 psig (4137 bar).
- Working temperature: -50°F (-45°C) to 500°F (260°C).
- Cracking pressure: 14 psig ~ 26 psig (0.966 bar~1.794 bar).

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	O-Ring	Wide Selection of O-Rings available
5	Poppet	316 SS/A479
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions



Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	C	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in (mm)					
60CSS-FH4	6FH4	0.094 (2.39)	0.15	3.38 (85.85)	2.50 (63.50)	0.50 (12.70)	0.63 (16.00)	1.18 (29.97)	60,000 (4137)
60CSS-FH6	6FH6	0.125 (3.18)	0.28	3.75 (95.25)	2.62 (66.55)	0.53 (13.46)	0.75 (19.05)	1.18 (29.97)	60,000 (4137)
60CSS-FH9	6FH9	0.187 (4.75)	0.63	4.62 (117.35)	3.38 (85.85)	0.81 (20.57)	1.12 (28.45)	1.50 (38.10)	60,000 (4137)

60CO Series

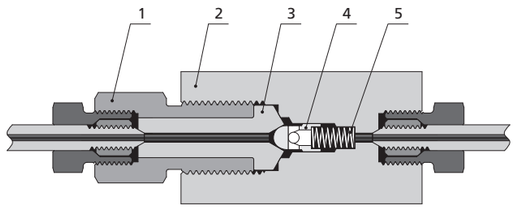
60,000 psi (4137 bar)

Ball Check Valves

Features

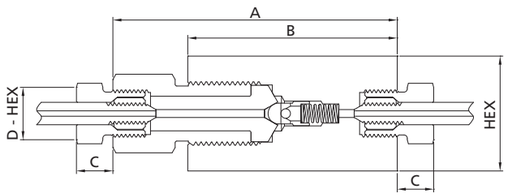
- Prevents reverse flow where leak-tight shut-off is not mandatory. When differential drops below cracking pressure, valve closes (Not for use as relief valve).
- Tubing sizes available for 1/4" to 9/16".
- Maximum working pressure: 60,000 psig (4137 bar).
- Working temperature: -110°F (-79°C) to 1200°F (649°C).
- Ball is cradled in floating poppet to assure positive, in-line seating without "chatter". poppet is designed essentially for axial flow with minimum pressure drop.

Standard Materials



Item	Component	Valve Material
1	Cover Gland	316 SS/A479
2	Valve Body	316 SS/A479
3	Cover	316 SS/A479
4	Ball Poppet	316 SS/A479
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum disulfide

Technical Data and Dimensions

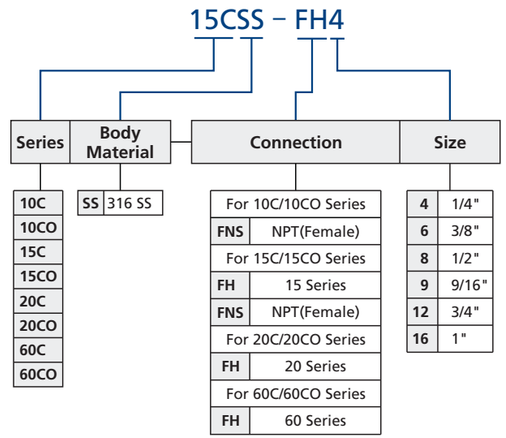


Ordering Number	Connection Type	Orifice in.(mm)	Rated Cv	A	B	C	D - HEX	HEX	Pressure/Temperature Rating psig (bar) @ Room Temperature
				in. (mm)					
60COSS-FH4	6FH4	0.094 (2.39)	0.15	3.38 (85.85)	2.50 (63.50)	0.50 (12.70)	0.63 (16.00)	1.18 (29.97)	60,000 (4137)
60COSS-FH6	6FH6	0.125 (3.18)	0.28	3.75 (95.25)	2.62 (66.55)	0.53 (13.46)	0.75 (19.05)	1.18 (29.97)	60,000 (4137)
60COSS-FH9	6FH9	0.187 (4.75)	0.63	4.62 (117.35)	3.38 (85.85)	0.81 (20.57)	1.12 (28.45)	1.50 (38.10)	60,000 (4137)

NOTE:

All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Part Number Description



Note: "Part Number Description" is used for composition rules of FITOK product model, Not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK company or authorized agents.

Options: O-ring
Fluorocarbon FKM is standard. For other materials, add a material code to the valve ordering number.
Example: 20CSS-FH6-K

Code	O-ring Material	Temperature Range
	Fluorocarbon FKM	0 to 400°F (-17.8 to 204°C)
N	NBR	-40 to 250°F (-40 to 121°C)
K	Kalrez	-40 to 500°F (-40 to 260°C)
E	EPDM	-50 to 300°F (-45 to 148°C)